Space Weather Forecast

Issued on Friday, 14 June 2024 at 00:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Chance of Minor Geomagnetic storm day 2. Chance of isolated Moderate flares (R1-R2 radio blackouts). Slight chance of Minor solar radiation storm (S1) initially, this risk declining into the period.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Moderate, with an isolated Moderate class flare at 13/1645 UTC attributed to a fairly small but moderately magnetic region in the southeast. The largest region on the visible disc, which has developed to become magnetically complex, is also in the southeast. The remaining regions, six numbered and one unnumbered, are relatively small and simple.

No Earth directed CME's were observed during the period.

Solar Wind / Geomagnetic Activity: Solar winds were indicative of a slow regime. The speed was stable and slow-ambient, generally between 320-350 km/s through the period. The IMF (Interplanetary Magnetic Field) was weak and unremarkable throughout, with only small deviations in the important north-south component. Geomagnetic activity was Quiet as a result.

Energetic Particles / Solar Radiation: The high energy (greater than 10 MeV) proton flux has remained below the S1/Minor storm threshold, with a decreasing trend.

Four-Day Space Weather Forecast Summary

Solar Activity: There is a chance of further isolated Moderate class flares, with just a slight chance of Strong flares, with any significant flares most likely from the largest and most magnetically complex on the visible disc, in the southeast.

Solar Wind / Geomagnetic Activity: A faint Coronal Mass Ejection (CME) associated with a Moderate flare at 12/2246 UTC is now expected to have an Earth directed component, possibly reaching Earth later on Day 2 (15 Jun). A weak enhancement from a coronal hole feature, almost centre disc, may also connect to Earth later day 3 (15th) into day 4 (16th).
Overall geomagnetic activity is expected to start at Quiet levels, then increase to become Active to Minor storm levels later tomorrow, with a chance of Moderate storm intervals. Geomagnetic levels then decline to become Quiet to Unsettled for days 3 and 4 (16-17th), but with a chance of isolated Active intervals.

Energetic Particles / Solar Radiation: Solar radiation is currently close to S1/Minor solar radiation storm levels, but is expected to ease over the coming days. A chance of further S1 enhancement is maintained for Day 1 (13 Jun), before the risk eases into the period.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	50	10	10
Strong	G3	No	1	1	5	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	40	40	40	40
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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